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## SEQUENCE LISTING

&lt;110&gt; SODE, Koji

&lt;120&gt; Glucose dehydrogenase beta-subunit and DNA encoding the same

&lt;130&gt; G780-OP1551

&lt;141&gt; 2003-04-25

&lt;150&gt; JP 2002-125353

&lt;151&gt; 2002-04-26

&lt;160&gt; 19

&lt;170&gt; PatentIn Ver. 2.0

&lt;210&gt; 1

&lt;211&gt; 2467

&lt;212&gt; DNA

&lt;213&gt; Burkholderia cepacia

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (258)..(761)

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (764)..(2380)

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (2386)..(2466)

&lt;400&gt; 1

aagctttctg tttgattgca cgcgatctta accgagcgtc tggaggcgg aacgcgacat 60  
gcctcggtgc gcacacgtgt cggccggacg acacaaaaat gcagcgaaat ggctgtatcg 120  
tacgaatggc tgacacatgt aatggactat aaaaccatgt tccgttccgg aatgtgcgcg 180  
tacatttcag gtccgcgccg attttgaga aatatcaagc gtggtttcc cgaatccgg 240  
gttcgagaga aggaaac atg cac aac gac aac act ccc cac tcg cgt cgc 290

Met His Asn Asp Asn Thr Pro His Ser Arg Arg

1

5

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|   |     |      |
|---|-----|------|
| cac ggc gac gca gcc gca tca ggc atc acg cgg cgt caa tgg ttg caa |     | 338  |
| His Gly Asp Ala Ala Ala Ser Gly Ile Thr Arg Arg Gln Trp Leu Gln |     |      |
| 15  | 20  | 25   |
| ggc gcg ctg gcg ctg acc gca gcg ggc ctc acg ggt tcg ctg aca ttg |     | 386  |
| Gly Ala Leu Ala Leu Thr Ala Ala Gly Leu Thr Gly Ser Leu Thr Leu |     |      |
| 30  | 35  | 40   |
| cgg gcg ctt gca gac aac ccc ggc act gcg ccg ctc gat acg ttc atg |     | 434  |
| Arg Ala Leu Ala Asp Asn Pro Gly Thr Ala Pro Leu Asp Thr Phe Met |     |      |
| 45  | 50  | 55   |
| acg ctt tcc gaa tcg ctg acc ggc aag aaa ggg ctc acg cgc gtg atc |     | 482  |
| Thr Leu Ser Glu Ser Leu Thr Gly Lys Lys Gly Leu Ser Arg Val Ile |     |      |
| 60  | 65  | 70   |
| 75  |     |      |
| ggc gag cgc ctg ctg cag gcg ctg cag aag ggc tcg ttc aag acg gcc |     | 530  |
| Gly Glu Arg Leu Leu Gln Ala Leu Gln Lys Gly Ser Phe Lys Thr Ala |     |      |
| 80  | 85  | 90   |
| gac agc ctg ccg cag ctc gcc ggc gcg ctc gcg tcc ggt tcg ctg acg |     | 578  |
| Asp Ser Leu Pro Gln Leu Ala Gly Ala Leu Ala Ser Gly Ser Leu Thr |     |      |
| 95  | 100 | 105  |
| cct gaa cag gaa tcg ctc gca ctg acg atc ctc gag gcc tgg tat ctc |     | 626  |
| Pro Glu Gln Glu Ser Leu Ala Leu Thr Ile Leu Glu Ala Trp Tyr Leu |     |      |
| 110   | 115 | 120  |
| ggc atc gtc gac aac gtc gtg att acg tac gag gaa gca tta atg ttc |     | 674  |
| Gly Ile Val Asp Asn Val Val Ile Thr Tyr Glu Glu Ala Leu Met Phe |     |      |
| 125   | 130 | 135  |
| ggc gtc gtg tcc gat acg ctc gtg atc cgt tcg tat tgc ccc aac aaa |     | 722  |
| Gly Val Val Ser Asp Thr Leu Val Ile Arg Ser Tyr Cys Pro Asn Lys |     |      |
| 140   | 145 | 150  |
| 155   |     |      |
| ccc ggc ttc tgg gcc gac aaa ccg atc gag agg caa gcc tg atg gcc  |     | 769  |
| Pro Gly Phe Trp Ala Asp Lys Pro Ile Glu Arg Gln Ala Met Ala     |     |      |
| 160   | 165 | 170  |
| gat acc gat acg caa aag gcc gac gtc gtc gtt gga tcg ggt gtc     |     | 817  |
| Asp Thr Asp Thr Gln Lys Ala Asp Val Val Val Val Gly Ser Gly Val |     |      |
| 175   | 180 | 185  |
| gcg ggc gcg atc gtc gcg cat cag ctc gcg atg gcg ggc aag gcg gtg |     | 865  |
| Ala Gly Ala Ile Val Ala His Gln Leu Ala Met Ala Gly Lys Ala Val |     |      |
| 190   | 195 | 200  |
| atc ctg ctc gaa gcg ggc ccg cgc atg ccg cgc tgg gaa atc gtc gag |     | 913  |
| Ile Leu Leu Glu Ala Gly Pro Arg Met Pro Arg Trp Glu Ile Val Glu |     |      |
| 205   | 210 | 215  |
| cgc ttc cgc aat cag ccc gac aag atg gac ttc atg gcg ccg tac ccg |     | 961  |
| Arg Phe Arg Asn Gln Pro Asp Lys Met Asp Phe Met Ala Pro Tyr Pro |     |      |
| 220   | 225 | 230  |
| tcg agc ccc tgg gcg ccg cat ccc gag tac ggc ccg ccg aac gac tac |     | 1009 |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Ser | Ser | Pro | Trp | Ala | Pro | His | Pro | Glu | Tyr | Gly | Pro | Pro | Asn | Asp | Tyr |      |
| 235 |     |     |     | 240 |     |     |     | 245 |     |     |     |     |     |     | 250 |      |
| ctg | atc | ctg | aag | ggc | gag | cac | aag | ttc | aac | tcg | cag | tac | atc | cgc | gcg | 1057 |
| Leu | Ile | Leu | Lys | Gly | Glu | His | Lys | Phe | Asn | Ser | Gln | Tyr | Ile | Arg | Ala |      |
|     |     |     |     |     |     | 255 |     |     | 260 |     |     |     |     | 265 |     |      |
| gtg | ggc | ggc | acg | acg | tgg | cac | tgg | gcc | gcf | tcg | gcf | tgg | cgc | ttc | att | 1105 |
| Val | Gly | Gly | Thr | Thr | Trp | His | Trp | Ala | Ala | Ser | Ala | Trp | Arg | Phe | Ile |      |
|     |     |     |     |     | 270 |     |     | 275 |     |     |     | 280 |     |     |     |      |
| ccg | aac | gac | ttc | aag | atg | aag | agc | gtg | tac | ggc | gtc | ggc | cgc | gac | tgg | 1153 |
| Pro | Asn | Asp | Phe | Lys | Met | Lys | Ser | Val | Tyr | Gly | Val | Gly | Arg | Asp | Trp |      |
|     |     |     |     |     | 285 |     |     | 290 |     |     |     | 295 |     |     |     |      |
| ccg | atc | cag | tac | gac | gat | ctc | gag | ccg | tac | tat | cag | cgc | gcf | gag | gaa | 1201 |
| Pro | Ile | Gln | Tyr | Asp | Asp | Leu | Glu | Pro | Tyr | Tyr | Gln | Arg | Ala | Glu | Glu |      |
|     |     | 300 |     |     | 305 |     |     | 310 |     |     |     |     |     |     |     |      |
| gag | ctc | ggc | gtg | tgg | ggc | ccg | ggc | ccc | gag | gaa | gat | ctg | tac | tcg | ccg | 1249 |
| Glu | Leu | Gly | Val | Trp | Gly | Pro | Gly | Pro | Glu | Glu | Asp | Leu | Tyr | Ser | Pro |      |
|     |     | 315 |     |     | 320 |     |     | 325 |     |     |     | 330 |     |     |     |      |
| ccg | aag | cag | ccg | tat | ccg | atg | ccg | ccg | ctg | ccg | tgg | tcg | ttc | aac | gag | 1297 |
| Arg | Lys | Gln | Pro | Tyr | Pro | Met | Pro | Pro | Leu | Pro | Leu | Ser | Phe | Asn | Glu |      |
|     |     |     |     |     | 335 |     |     | 340 |     |     |     | 345 |     |     |     |      |
| cag | acc | atc | aag | acg | gcf | ctg | aac | aac | tac | gat | ccg | aag | ttc | cat | gtc | 1345 |
| Gln | Thr | Ile | Lys | Thr | Ala | Leu | Asn | Asn | Tyr | Asp | Pro | Lys | Phe | His | Val |      |
|     |     | 350 |     |     | 355 |     |     | 360 |     |     |     |     |     |     |     |      |
| gtg | acc | gag | ccg | gtc | gcf | ccg | aac | agc | cgc | ccg | tac | gac | ggc | cgc | ccg | 1393 |
| Val | Thr | Glu | Pro | Val | Ala | Arg | Asn | Ser | Arg | Pro | Tyr | Asp | Gly | Arg | Pro |      |
|     |     | 365 |     |     | 370 |     |     | 375 |     |     |     |     |     |     |     |      |
| act | tgt | tgc | ggc | aac | aac | tgc | atg | ccg | atc | tgc | ccg | atc | ggc | gcf |     | 1441 |
| Thr | Cys | Cys | Gly | Asn | Asn | Asn | Cys | Met | Pro | Ile | Cys | Pro | Ile | Gly | Ala |      |
|     |     | 380 |     |     | 385 |     |     | 390 |     |     |     |     |     |     |     |      |
| atg | tac | aac | ggc | atc | gtg | cac | gtc | gag | aag | gcc | gaa | cgc | gcc | ggc | gcf | 1489 |
| Met | Tyr | Asn | Gly | Ile | Val | His | Val | Glu | Lys | Ala | Glu | Arg | Ala | Gly | Ala |      |
|     |     | 395 |     |     | 400 |     |     | 405 |     |     |     | 410 |     |     |     |      |
| aag | ctg | atc | gag | aac | gcf | gtc | tac | aag | ctc | gag | acg | ggc | ccg | gac |     | 1537 |
| Lys | Leu | Ile | Glu | Asn | Ala | Val | Val | Tyr | Lys | Leu | Glu | Thr | Gly | Pro | Asp |      |
|     |     |     |     |     | 415 |     |     | 420 |     |     |     | 425 |     |     |     |      |
| aag | cgc | atc | gtc | gcf | gcf | ctc | tac | aag | gac | aag | acg | ggc | gcc | gag | cat | 1585 |
| Lys | Arg | Ile | Val | Ala | Ala | Leu | Tyr | Lys | Asp | Lys | Thr | Gly | Ala | Glu | His |      |
|     |     | 430 |     |     | 435 |     |     | 440 |     |     |     | 440 |     |     |     |      |
| cgc | gtc | gaa | ggc | aag | tat | ttc | gtg | ctc | gcc | gcf | aac | ggc | atc | gag | acg | 1633 |
| Arg | Val | Glu | Gly | Lys | Tyr | Phe | Val | Leu | Ala | Ala | Asn | Gly | Ile | Glu | Thr |      |
|     |     | 445 |     |     | 450 |     |     | 455 |     |     |     | 455 |     |     |     |      |
| ccg | aag | atc | ctg | ctg | atg | tcc | gcf | aac | ccg | gat | ttc | ccg | aac | ggt | gtc | 1681 |
| Pro | Lys | Ile | Leu | Leu | Met | Ser | Ala | Asn | Arg | Asp | Phe | Pro | Asn | Gly | Val |      |

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| 460   | 465 | 470 |      |
|---|-----|-----|------|
| gcg aac agc tcg gac atg gtc ggc cgc aac ctg atg gac cat ccg ggc |     |     | 1729 |
| Ala Asn Ser Ser Asp Met Val Gly Arg Asn Leu Met Asp His Pro Gly |     |     |      |
| 475   | 480 | 485 | 490  |
| acc ggc gtg tcg ttc tat gcg agc gag aag ctg tgg ccg ggc cgc ggc |     |     | 1777 |
| Thr Gly Val Ser Phe Tyr Ala Ser Glu Lys Leu Trp Pro Gly Arg Gly |     |     |      |
| 495   | 500 | 505 |      |
| ccg cag gag atg acg tcg ctg atc ggt ttc cgc gac ggt ccg ttc cgc |     |     | 1825 |
| Pro Gln Glu Met Thr Ser Leu Ile Gly Phe Arg Asp Gly Pro Phe Arg |     |     |      |
| 510   | 515 | 520 |      |
| gcg acc gaa gcg gcg aag aag atc cac ctg tcg aac ctg tcg cgc atc |     |     | 1873 |
| Ala Thr Glu Ala Ala Lys Lys Ile His Leu Ser Asn Leu Ser Arg Ile |     |     |      |
| 525   | 530 | 535 |      |
| gac cag gag acg cag aag atc ttc aag gcc ggc aag ctg atg aag ccc |     |     | 1921 |
| Asp Gln Glu Thr Gln Lys Ile Phe Lys Ala Gly Lys Leu Met Lys Pro |     |     |      |
| 540   | 545 | 550 |      |
| gac gag ctc gac gcg cag atc cgc gac cgt tcc gca cgc tac gtg cag |     |     | 1969 |
| Asp Glu Leu Asp Ala Gln Ile Arg Asp Arg Ser Ala Arg Tyr Val Gln |     |     |      |
| 555   | 560 | 565 | 570  |
| ttc gac tgc ttc cac gaa atc ctg ccg caa ccc gag aac cgc atc gtg |     |     | 2017 |
| Phe Asp Cys Phe His Glu Ile Leu Pro Gln Pro Glu Asn Arg Ile Val |     |     |      |
| 575   | 580 | 585 |      |
| ccg agc aag acg gcg acc gat gcg atc ggc att ccg cgc ccc gag atc |     |     | 2065 |
| Pro Ser Lys Thr Ala Thr Asp Ala Ile Gly Ile Pro Arg Pro Glu Ile |     |     |      |
| 590   | 595 | 600 |      |
| acg tat gcg atc gac gac tac gtg aag cgc ggc gcc gcg cat acg cgc |     |     | 2113 |
| Thr Tyr Ala Ile Asp Asp Tyr Val Lys Arg Gly Ala Ala His Thr Arg |     |     |      |
| 605   | 610 | 615 |      |
| gag gtc tac gcg acc gcc gcg aag gtg ctc ggc ggc acg gac gtc gtg |     |     | 2161 |
| Glu Val Tyr Ala Thr Ala Ala Lys Val Leu Gly Gly Thr Asp Val Val |     |     |      |
| 620   | 625 | 630 |      |
| ttc aac gac gaa ttc gcg ccg aac aat cac atc acg ggc tcg acg atc |     |     | 2209 |
| Phe Asn Asp Glu Phe Ala Pro Asn Asn His Ile Thr Gly Ser Thr Ile |     |     |      |
| 635   | 640 | 645 | 650  |
| atg ggc gcc gat gcg cgc gac tcc gtc gtc gac aag gac tgc cgc acg |     |     | 2257 |
| Met Gly Ala Asp Ala Arg Asp Ser Val Val Asp Lys Asp Cys Arg Thr |     |     |      |
| 655   | 660 | 665 |      |
| ttc gac cat ccg aac ctg ttc att tcg acg acg gcg acg atg ccg acc |     |     | 2305 |
| Phe Asp His Pro Asn Leu Phe Ile Ser Ser Ala Thr Met Pro Thr     |     |     |      |
| 670   | 675 | 680 |      |
| gtc ggt acc gta aac gtg acg ctg acg atc gcc gcg ctc gcg ctg cgg |     |     | 2353 |
| Val Gly Thr Val Asn Val Thr Leu Thr Ile Ala Ala Leu Ala Leu Arg |     |     |      |
| 685   | 690 | 695 |      |

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atg tcg gac acg ctg aag aag gaa gtc tgacc gtg cg<sup>g</sup> aaa tct act ctc 2403  
 Met Ser Asp Thr Leu Lys Lys Glu Val Val Arg Lys Ser Thr Leu  
 700 705 710  
 act ttc ctc atc gcc ggc tgc ctc gcg ttg ccg ggc ttc gcg cgc gc<sup>g</sup> 2451  
 Thr Phe Leu Ile Ala Gly Cys Leu Ala Leu Pro Gly Phe Ala Arg Ala  
 715 720 725  
 gcc gat gc<sup>g</sup> gcc gat c 2467  
 Ala Asp Ala Ala Asp  
 730

<210> 2  
 <211> 168  
 <212> PRT  
 <213> Burkholderia cepacia

<400> 2  
 Met His Asn Asp Asn Thr Pro His Ser Arg Arg His Gly Asp Ala Ala  
 1 5 10 15  
 Ala Ser Gly Ile Thr Arg Arg Gln Trp Leu Gln Gly Ala Leu Ala Leu  
 20 25 30  
 Thr Ala Ala Gly Leu Thr Gly Ser Leu Thr Leu Arg Ala Leu Ala Asp  
 35 40 45  
 Asn Pro Gly Thr Ala Pro Leu Asp Thr Phe Met Thr Leu Ser Glu Ser  
 50 55 60  
 Leu Thr Gly Lys Lys Gly Leu Ser Arg Val Ile Gly Glu Arg Leu Leu  
 65 70 75 80  
 Gln Ala Leu Gln Lys Gly Ser Phe Lys Thr Ala Asp Ser Leu Pro Gln  
 85 90 95  
 Leu Ala Gly Ala Leu Ala Ser Gly Ser Leu Thr Pro Glu Gln Glu Ser  
 100 105 110  
 Leu Ala Leu Thr Ile Leu Glu Ala Trp Tyr Leu Gly Ile Val Asp Asn  
 115 120 125  
 Val Val Ile Thr Tyr Glu Glu Ala Leu Met Phe Gly Val Val Ser Asp  
 130 135 140  
 Thr Leu Val Ile Arg Ser Tyr Cys Pro Asn Lys Pro Gly Phe Trp Ala  
 145 150 155 160  
 Asp Lys Pro Ile Glu Arg Gln Ala  
 165

<210> 3  
 <211> 539  
 <212> PRT  
 <213> Burkholderia cepacia

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&lt;400&gt; 3

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asp | Thr | Asp | Thr | Gln | Lys | Ala | Asp | Val | Val | Val | Val | Gly | Ser |
| 1   |     |     |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |
| Gly | Val | Ala | Gly | Ala | Ile | Val | Ala | His | Gln | Leu | Ala | Met | Ala | Gly | Lys |
|     |     |     |     |     | 20  |     |     |     | 25  |     |     |     | 30  |     |     |
| Ala | Val | Ile | Leu | Leu | Glu | Ala | Gly | Pro | Arg | Met | Pro | Arg | Trp | Glu | Ile |
|     |     |     |     |     | 35  |     |     | 40  |     |     | 45  |     |     |     |     |
| Val | Glu | Arg | Phe | Arg | Asn | Gln | Pro | Asp | Lys | Met | Asp | Phe | Met | Ala | Pro |
|     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |     |
| Tyr | Pro | Ser | Ser | Pro | Trp | Ala | Pro | His | Pro | Glu | Tyr | Gly | Pro | Pro | Asn |
|     | 65  |     |     |     | 70  |     |     |     | 75  |     |     |     | 80  |     |     |
| Asp | Tyr | Leu | Ile | Leu | Lys | Gly | Glu | His | Lys | Phe | Asn | Ser | Gln | Tyr | Ile |
|     |     |     |     |     | 85  |     |     |     | 90  |     |     |     | 95  |     |     |
| Arg | Ala | Val | Gly | Gly | Thr | Thr | Trp | His | Trp | Ala | Ala | Ser | Ala | Trp | Arg |
|     |     |     |     |     | 100 |     |     | 105 |     |     |     | 110 |     |     |     |
| Phe | Ile | Pro | Asn | Asp | Phe | Lys | Met | Lys | Ser | Val | Tyr | Gly | Val | Gly | Arg |
|     |     |     |     |     | 115 |     |     | 120 |     |     |     | 125 |     |     |     |
| Asp | Trp | Pro | Ile | Gln | Tyr | Asp | Asp | Leu | Glu | Pro | Tyr | Tyr | Gln | Arg | Ala |
|     |     |     |     |     | 130 |     |     | 135 |     |     | 140 |     |     |     |     |
| Glu | Glu | Glu | Leu | Gly | Val | Trp | Gly | Pro | Gly | Pro | Glu | Glu | Asp | Leu | Tyr |
|     | 145 |     |     |     | 150 |     |     |     | 155 |     |     |     | 160 |     |     |
| Ser | Pro | Arg | Lys | Gln | Pro | Tyr | Pro | Met | Pro | Pro | Leu | Pro | Leu | Ser | Phe |
|     |     |     |     |     | 165 |     |     |     | 170 |     |     |     | 175 |     |     |
| Asn | Glu | Gln | Thr | Ile | Lys | Thr | Ala | Leu | Asn | Asn | Tyr | Asp | Pro | Lys | Phe |
|     |     |     |     |     | 180 |     |     |     | 185 |     |     | 190 |     |     |     |
| His | Val | Val | Thr | Glu | Pro | Val | Ala | Arg | Asn | Ser | Arg | Pro | Tyr | Asp | Gly |
|     |     |     |     |     | 195 |     |     | 200 |     |     | 205 |     |     |     |     |
| Arg | Pro | Thr | Cys | Cys | Gly | Asn | Asn | Asn | Cys | Met | Pro | Ile | Cys | Pro | Ile |
|     |     |     |     |     | 210 |     |     | 215 |     |     | 220 |     |     |     |     |
| Gly | Ala | Met | Tyr | Asn | Gly | Ile | Val | His | Val | Glu | Lys | Ala | Glu | Arg | Ala |
|     | 225 |     |     |     | 230 |     |     |     | 235 |     |     | 240 |     |     |     |
| Gly | Ala | Lys | Leu | Ile | Glu | Asn | Ala | Val | Val | Tyr | Lys | Leu | Glu | Thr | Gly |
|     |     |     |     |     | 245 |     |     |     | 250 |     |     | 255 |     |     |     |
| Pro | Asp | Lys | Arg | Ile | Val | Ala | Ala | Leu | Tyr | Lys | Asp | Lys | Thr | Gly | Ala |
|     |     |     |     |     | 260 |     |     | 265 |     |     | 270 |     |     |     |     |
| Glu | His | Arg | Val | Glu | Gly | Lys | Tyr | Phe | Val | Leu | Ala | Ala | Asn | Gly | Ile |
|     |     |     |     |     | 275 |     |     | 280 |     |     | 285 |     |     |     |     |
| Glu | Thr | Pro | Lys | Ile | Leu | Leu | Met | Ser | Ala | Asn | Arg | Asp | Phe | Pro | Asn |
|     |     |     |     |     | 290 |     |     | 295 |     |     | 300 |     |     |     |     |
| Gly | Val | Ala | Asn | Ser | Ser | Asp | Met | Val | Gly | Arg | Asn | Leu | Met | Asp | His |
|     | 305 |     |     |     | 310 |     |     |     | 315 |     |     | 320 |     |     |     |
| Pro | Gly | Thr | Gly | Val | Ser | Phe | Tyr | Ala | Ser | Glu | Lys | Leu | Trp | Pro | Gly |

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| 325   | 330             | 335         |
|---|-----------------|-------------|
| Arg Gly Pro Gln Glu Met Thr Ser Leu Ile     | Gly Phe Arg Asp | Gly Pro     |
| 340   | 345             | 350         |
| Phe Arg Ala Thr Glu Ala Ala Lys Lys Ile His | Leu Ser Asn     | Leu Ser     |
| 355   | 360             | 365         |
| Arg Ile Asp Gln Glu Thr Gln Lys Ile Phe Lys | Ala Gly Lys     | Leu Met     |
| 370   | 375             | 380         |
| Lys Pro Asp Glu Leu Asp Ala Gln Ile Arg Asp | Arg Ser Ala     | Arg Tyr     |
| 385   | 390             | 395         |
| 395   | 400             |             |
| Val Gln Phe Asp Cys Phe His Glu Ile Leu Pro | Gln Pro Glu Asn | Arg         |
| 405   | 410             | 415         |
| Ile Val Pro Ser Lys Thr Ala Thr Asp Ala Ile | Gly Ile Pro     | Arg Pro     |
| 420   | 425             | 430         |
| Glu Ile Thr Tyr Ala Ile Asp Asp Tyr Val Lys | Arg Gly Ala     | Ala His     |
| 435   | 440             | 445         |
| Thr Arg Glu Val Tyr Ala Thr Ala Ala Lys Val | Leu Gly         | Gly Thr Asp |
| 450   | 455             | 460         |
| Val Val Phe Asn Asp Glu Phe Ala Pro Asn Asn | His Ile Thr     | Gly Ser     |
| 465   | 470             | 475         |
| 475   | 480             |             |
| Thr Ile Met Gly Ala Asp Ala Arg Asp Ser Val | Val Asp Lys     | Asp Cys     |
| 485   | 490             | 495         |
| Arg Thr Phe Asp His Pro Asn Leu Phe Ile Ser | Ser Ser Ala     | Thr Met     |
| 500   | 505             | 510         |
| Pro Thr Val Gly Thr Val Asn Val Thr Leu Thr | Ile Ala Ala     | Leu Ala     |
| 515   | 520             | 525         |
| Leu Arg Met Ser Asp Thr Leu Lys Lys Glu Val |                 |             |
| 530   | 535             |             |

&lt;210&gt; 4

&lt;211&gt; 27

&lt;212&gt; PRT

&lt;213&gt; Burkholderia cepacia

&lt;400&gt; 4

|   |             |             |    |
|---|-------------|-------------|----|
| Val Arg Lys Ser Thr Leu Thr Phe Leu Ile     | Ala Gly Cys | Leu Ala Leu |    |
| 1   | 5           | 10          | 15 |
| Pro Gly Phe Ala Arg Ala Ala Asp Ala Ala Asp |             |             |    |
| 20  | 25          |             |    |

&lt;210&gt; 5

&lt;211&gt; 28

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: primer

&lt;400&gt; 5

cccaagcttg ggccgatacc gatacgca

28

&lt;210&gt; 6

&lt;211&gt; 29

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: primer

&lt;400&gt; 6

gagaagcttt ccgcacggtc agacttcc

29

&lt;210&gt; 7

&lt;211&gt; 27

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: primer

&lt;400&gt; 7

catgccatgg cacacaacga caacact

27

&lt;210&gt; 8

&lt;211&gt; 27

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: primer

&lt;400&gt; 8

cccaagcttg ggtagactt ccttcttcag c

31

&lt;210&gt; 9

&lt;211&gt; 16

&lt;212&gt; PRT

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&lt;213&gt; Burkholderia cepacia

&lt;400&gt; 9

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asp | Ala | Ala | Asp | Pro | Ala | Leu | Val | Lys | Arg | Gly | Glu | Tyr | Leu | Ala |
| 1   |     |     |     |     |     |     |     |     | 10  |     |     |     |     | 15  |     |

&lt;210&gt; 10

&lt;211&gt; 25

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence:consensus

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (6, 17, 18, 19, 22)

&lt;223&gt; Xaa=unknown

&lt;400&gt; 10

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asp | Ala | Ala | Asp | Xaa | Ala | Leu | Val | Lys | Arg | Gly | Glu | Tyr | Leu | Ala |
| 1   |     |     |     |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Xaa | Xaa | Xaa | Asp | Cys | Xaa | Ala | Cys | His |     |     |     |     |     |     |     |
|     |     |     |     |     |     |     |     | 25  |     |     |     |     |     |     |     |

&lt;210&gt; 11

&lt;211&gt; 2410

&lt;212&gt; DNA

&lt;213&gt; Burkholderia cepacia

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (673)..(1950)

&lt;400&gt; 11

gatggaccac ccgggcacccg gcgtgtcggtt ctacgcgaac gagaaggctgt ggccgggccc 60  
 cggcccgcaag gatatgacgt cgcttgtatcg tttccgcgac ggcccgttcc ggcgcgaccga 120  
 agccgcgaag aagatccatc tgtcgaacat gtcccccatc aaccaggaga cgcagaagat 180  
 ttcaaggccc ggcaaactga tgaagcacga ggagctcgac ggcgcagatcc ggcgaccgttc 240  
 cgcgcgtac gtgcagttcg actgtttcca cgagattctg ccgcagcccg agaaccgcat 300  
 cgtgccgagc aagacggcca ccgacgcgtatccg cgcggccgaga tcacgtatgc 360  
 gatgcacgtat tacgtgaagc gcggcgcgtt gcacacgcgc gaggtctacg cgacggccgc 420  
 gaagggtgcgt ggcggcaccg acgtcgctt caacgacgag ttcgcgcgaca 480

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cacggcgccg aggatcatgg ggcgatgc acgcgactcg gtcgtcgaca aggactgccc 540  
 cacttcgac catccgaacc tggcccttc gagcagctcg acgatgccga ccgtcggtac 600  
 ggtgaacgtg acgctgacga tcggcgct cgccgtcgaa atgtcgacaa cgctgaagaa 660  
 ggaagtctga cc gtg cgg aaa tct act ctc acc ttc ctc ctc gcc ggc tgc 711  
                   Val Arg Lys Ser Thr Leu Thr Phe Leu Leu Ala Gly Cys  
                   1                     5                     10  
 ctc gcg ctg ccc ggc ctc gca cgc gcg gcc gat tcg gcc gat ccg gcg 759  
 Leu Ala Leu Pro Gly Leu Ala Arg Ala Ala Asp Ser Ala Asp Pro Ala  
                   15                 20                     25  
 cat gtc aag cgc ggc gaa tac ctc gcc gtc gcg ggc gac tgc atg gca 807  
 His Val Lys Arg Gly Glu Tyr Leu Ala Val Ala Gly Asp Cys Met Ala  
                   30                 35                     40                     45  
 tgc cac acc gcg aag ggc ggc aag ccg ttc gcg ggc ggc ctc ggc atg 855  
 Cys His Thr Ala Lys Gly Gly Lys Pro Phe Ala Gly Gly Leu Gly Met  
                   50                 55                     60  
 ccg gtg ccg atg ctc ggc aag atc tat acg agc aac atc aca ccg gat 903  
 Pro Val Pro Met Leu Gly Lys Ile Tyr Thr Ser Asn Ile Thr Pro Asp  
                   65                 70                     75  
 ccc gat acc ggc atc ggc aac tgg acg ttc gag gac ttc gag cgc gcg 951  
 Pro Asp Thr Gly Ile Gly Asn Trp Thr Phe Glu Asp Phe Glu Arg Ala  
                   80                 85                     90  
 gtg cgg cac ggc gta tcg aag aac ggc gac aac ctg tac ccg gcg atg 999  
 Val Arg His Gly Val Ser Lys Asn Gly Asp Asn Leu Tyr Pro Ala Met  
                   95                 100                    105  
 ccg tac gtg tcg tac gcg aag atc aac gac gac gac gtg caa gcg ctg 1047  
 Pro Tyr Val Ser Tyr Ala Lys Ile Asn Asp Asp Asp Val Gln Ala Leu  
                   110                 115                    120                     125  
 tac gcg tac ttc atg cac ggc gtc gaa ccg gtc aag cag gcg ccg ccg 1095  
 Tyr Ala Tyr Phe Met His Gly Val Glu Pro Val Lys Gln Ala Pro Pro  
                   130                 135                    140  
 aag aac gag atc ccc gcg ctg ctg agc atg cgc tgg ccg ctg aag atc 1143  
 Lys Asn Glu Ile Pro Ala Leu Leu Ser Met Arg Trp Pro Leu Lys Ile  
                   145                 150                    155  
 tgg aac tgg ctg ttc ctg aag gac ggc gtc tac cag ccg aag ccc gag 1191  
 Trp Asn Trp Leu Phe Leu Lys Asp Gly Val Tyr Gln Pro Lys Pro Glu  
                   160                 165                    170  
 cag agc gcc gag tgg aac cgc ggc gcc tat ctc gtg cag ggc ctc gcg 1239  
 Gln Ser Ala Glu Trp Asn Arg Gly Ala Tyr Leu Val Gln Gly Leu Ala  
                   175                 180                    185  
 cac tgc agc acg tgc cac acg ccg cgc ggc atc gcg atg cag gag aag 1287  
 His Cys Ser Thr Cys His Thr Pro Arg Gly Ile Ala Met Gln Glu Lys  
                   190                 195                    200                    205  
 tcg ctc gac gaa acg ggc ggc agc ttc ctg tcg ggc tcg gtg ctc gcg 1335

11/18

12/18

aatccggtgc gcgcacgccc cgcatcgtt tcgttgatcg agaccatgac accgaaccaa 2140  
 ccgtttctcg cgtcccagcg cgatgtgctg ctgcgtgtgt cccgaatcct gctcgatgc 2200  
 ctgttcgtga tgttcggctg gaagaagatt atcgacttct cggtaacgat cgcttcatg 2260  
 ggcagcgagg gcgcgcggc gccgatcatc tcggcggcga tctccgtcgt gatggagctc 2320  
 atcgtcggga ttgcgatcct cgtcggtttc cagacgcggc cgctcgcgct gttgcttgcg 2380  
 ctgtacacga tcggtaccgg catcaicggc 2410

&lt;210&gt; 12

&lt;211&gt; 425

&lt;212&gt; PRT

&lt;213&gt; Burkholderia cepacia

&lt;400&gt; 12

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Arg | Lys | Ser | Thr | Leu | Thr | Phe | Leu | Leu | Ala | Gly | Cys | Leu | Ala | Leu |
| 1   |     |     |     |     | 5   |     |     |     | 10  |     |     |     | 15  |     |     |
| Pro | Gly | Leu | Ala | Arg | Ala | Ala | Asp | Ser | Ala | Asp | Pro | Ala | His | Val | Lys |
|     |     |     |     |     | 20  |     |     |     | 25  |     |     |     | 30  |     |     |
| Arg | Gly | Glu | Tyr | Leu | Ala | Val | Ala | Gly | Asp | Cys | Met | Ala | Cys | His | Thr |
|     |     |     |     |     | 35  |     |     |     | 40  |     |     |     | 45  |     |     |
| Ala | Lys | Gly | Gly | Lys | Pro | Phe | Ala | Gly | Gly | Leu | Gly | Met | Pro | Val | Pro |
|     |     |     |     |     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |
| Met | Leu | Gly | Lys | Ile | Tyr | Thr | Ser | Asn | Ile | Thr | Pro | Asp | Pro | Asp | Thr |
|     |     |     |     |     | 65  |     |     |     | 70  |     |     |     | 75  |     | 80  |
| Gly | Ile | Gly | Asn | Trp | Thr | Phe | Glu | Asp | Phe | Glu | Arg | Ala | Val | Arg | His |
|     |     |     |     |     | 85  |     |     |     | 90  |     |     |     | 95  |     |     |
| Gly | Val | Ser | Lys | Asn | Gly | Asp | Asn | Leu | Tyr | Pro | Ala | Met | Pro | Tyr | Val |
|     |     |     |     |     | 100 |     |     |     | 105 |     |     |     | 110 |     |     |
| Ser | Tyr | Ala | Lys | Ile | Asn | Asp | Asp | Asp | Val | Gln | Ala | Leu | Tyr | Ala | Tyr |
|     |     |     |     |     | 115 |     |     |     | 120 |     |     |     | 125 |     |     |
| Phe | Met | His | Gly | Val | Glu | Pro | Val | Lys | Gln | Ala | Pro | Pro | Lys | Asn | Glu |
|     |     |     |     |     | 130 |     |     |     | 135 |     |     |     | 140 |     |     |
| Ile | Pro | Ala | Leu | Leu | Ser | Met | Arg | Trp | Pro | Leu | Lys | Ile | Trp | Asn | Trp |
|     |     |     |     |     | 145 |     |     |     | 150 |     |     |     | 155 |     | 160 |
| Leu | Phe | Leu | Lys | Asp | Gly | Val | Tyr | Gln | Pro | Lys | Pro | Glu | Gln | Ser | Ala |
|     |     |     |     |     | 165 |     |     |     | 170 |     |     |     | 175 |     |     |
| Glu | Trp | Asn | Arg | Gly | Ala | Tyr | Leu | Val | Gln | Gly | Leu | Ala | His | Cys | Ser |
|     |     |     |     |     | 180 |     |     |     | 185 |     |     |     | 190 |     |     |
| Thr | Cys | His | Thr | Pro | Arg | Gly | Ile | Ala | Met | Gln | Glu | Lys | Ser | Leu | Asp |
|     |     |     |     |     | 195 |     |     |     | 200 |     |     |     | 205 |     |     |
| Glu | Thr | Gly | Gly | Ser | Phe | Leu | Ser | Gly | Ser | Val | Leu | Ala | Gly | Trp | Asp |
|     |     |     |     |     | 210 |     |     |     | 215 |     |     |     | 220 |     |     |
| Gly | Tyr | Asn | Ile | Thr | Ser | Asp | Pro | Asn | Ala | Gly | Ile | Gly | Gly | Trp | Thr |
|     |     |     |     |     | 225 |     |     |     | 230 |     |     |     | 235 |     | 240 |

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Gln Gln Gln Leu Val Gln Tyr Leu Arg Thr Gly Ser Val Pro Gly Leu  
                  245                 250                 255  
 Ala Gln Ala Ala Gly Pro Met Ala Glu Ala Ile Glu His Ser Phe Ser  
                  260                 265                 270  
 Lys Met Thr Glu Ala Asp Ile Gly Gly Pro Met Ala Glu Ala Ile Glu  
                  275                 280                 285  
 His Ser Phe Ser Lys Met Thr Glu Ala Asp Ile Gly Arg Ser Ser Trp  
                  290                 295                 300  
 Gly Lys Pro Ala Glu Asp Gly Leu Lys Leu Arg Gly Val Ala Leu Ala  
                  305                 310                 315                 320  
 Ser Ser Gly Ile Asp Pro Ala Pro Leu Tyr Leu Gly Asn Cys Ala Thr  
                  325                 330                 335  
 Cys His Gln Met Gln Gly Lys Gly Thr Pro Asp Gly Tyr Tyr Pro Pro  
                  340                 345                 350  
 Leu Phe His Asn Ser Thr Val Gly Ala Ser Asn Pro Thr Asn Leu Val  
                  355                 360                 365  
 Gln Val Ile Leu Asn Gly Val Gln Arg Lys Ala Gly Ser Glu Asp Val  
                  370                 375                 380  
 Gly Met Pro Ala Phe Arg His Glu Leu Ser Asp Ala Gln Ile Ala Ala  
                  385                 390                 395                 400  
 Leu Thr Asn Tyr Leu Thr Gly Gln Phe Gly Asn Pro Ala Ala Lys Val  
                  405                 410                 415  
 Thr Glu Gln Asp Val Ala Lys Leu Arg  
                  420                 425

&lt;210&gt; 13

&lt;211&gt; 27

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: primer

&lt;400&gt; 13

tgcaccgtgc ggaaatctac tcctcact

27

&lt;210&gt; 14

&lt;211&gt; 27

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: primer

14/18

&lt;400&gt; 14

actttccttct tcagcggtgtc cgacatc

27

&lt;210&gt; 15

&lt;211&gt; 1441

&lt;212&gt; DNA

&lt;213&gt; Burkholderia cepacia

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (121)..(1398)

&lt;400&gt; 15

|                 |             |             |             |            |             |     |
|-----------------|-------------|-------------|-------------|------------|-------------|-----|
| tccgaaccgtg     | ttcatttcga  | gcagcgac    | gatgccgacc  | gtcggtaccg | taaacgtgac  | 60  |
| gctgacgatc      | gccgcgtcg   | cgctcggtat  | gtcggacacg  | ctgaagaagg | aagtctgacc  | 120 |
| gtg cgg aaa     | tct act ctc | act ttc ctc | atc gcc ggc | tgc ctc    | gct ttg     | 168 |
| Val Arg Lys Ser | Thr Leu Thr | Phe Leu Ile | Ala Gly Cys | Leu Ala    | Leu         |     |
| 1               | 5           | 10          | 15          |            |             |     |
| ccg ggc ttc     | gct cgc gct | gcc gat     | gct gcc gat | ccg gct    | ctg gtc aag | 216 |
| Pro Gly Phe     | Ala Arg Ala | Ala Asp     | Ala Ala Asp | Pro Ala    | Leu Val Lys |     |
| 20              | 25          | 30          |             |            |             |     |
| cgc ggc gaa tac | ctc gct acc | gcc atg     | ccg gta     | ccg atg    | ctc ggc aag | 264 |
| Arg Gly Glu Tyr | Leu Ala Thr | Ala Met Pro | Val Pro     | Met Leu    | Gly Lys     |     |
| 35              | 40          | 45          |             |            |             |     |
| atc tac acg agc | aac atc acg | ccc gat     | ccc gat     | acg ggc    | gac tgc atg | 312 |
| Ile Tyr Thr Ser | Asn Ile Thr | Pro Asp Pro | Asp Thr     | Gly Asp    | Cys Met     |     |
| 50              | 55          | 60          |             |            |             |     |
| gcc tgc cac acc | gtg aag ggc | ggc aag     | ccg tac     | gct ggc    | ctt ggc     | 360 |
| Ala Cys His Thr | Val Lys Gly | Gly Lys Pro | Tyr Ala     | Gly Gly    | Leu Gly     |     |
| 65              | 70          | 75          | 80          |            |             |     |
| ggc atc ggc aaa | tgg acg ttc | gag gac     | ttc gag     | ccg gct    | gtg cgg cac | 408 |
| Gly Ile Gly Lys | Trp Thr Phe | Glu Asp Phe | Glu Arg     | Ala Val    | Arg His     |     |
| 85              | 90          | 95          |             |            |             |     |
| ggc gtg tcg aag | aac ggc gac | aac ctg tat | ccg gct     | atg ccg    | tac gtg     | 456 |
| Gly Val Ser Lys | Asn Gly Asp | Asn Leu Tyr | Pro Ala Met | Pro Tyr    | Val         |     |
| 100             | 105         | 110         |             |            |             |     |
| tcg tac gcg aag | atc aag gac | gac gac     | gta cgc     | gct tac    | gcc tac     | 504 |
| Ser Tyr Ala Lys | Ile Lys Asp | Asp Asp     | Asp Val     | Arg Ala    | Leu Tyr Ala |     |
| 115             | 120         | 125         |             |            |             |     |
| ttc atg cac ggc | gtc gag ccg | gtc aag cag | ccg gct     | ccg aag    | aac gag     | 552 |
| Phe Met His Gly | Val Glu Pro | Val Lys Gln | Ala Pro     | Pro Lys    | Asn Glu     |     |
| 130             | 135         | 140         |             |            |             |     |

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|   |      |
|---|------|
| atc cca gcg ctg cta agc atg cgc tgg ccg ctg aag atc tgg aac tgg | 600  |
| Ile Pro Ala Leu Leu Ser Met Arg Trp Pro Leu Lys Ile Trp Asn Trp |      |
| 145 150 155 160   |      |
| ctg ttc ctg aag gac ggc ccg tac cag ccg aag ccg tcg cag agc gcc | 648  |
| Leu Phe Leu Lys Asp Gly Pro Tyr Gln Pro Lys Pro Ser Gln Ser Ala |      |
| 165 170 175   |      |
| gaa tgg aat cgc ggc gcg tat ctg gtg cag ggt ctc gcg cac tgc agc | 696  |
| Glu Trp Asn Arg Gly Ala Tyr Leu Val Gln Gly Leu Ala His Cys Ser |      |
| 180 185 190   |      |
| acg tgc cac acg ccg cgc ggc atc gcg atg cag gag aag tcg ctc gac | 744  |
| Thr Cys His Thr Pro Arg Gly Ile Ala Met Gln Glu Lys Ser Leu Asp |      |
| 195 200 205   |      |
| gaa acc ggc ggc agc ttc ctc gcg ggg tcg gtg ctc gcc ggc tgg gac | 792  |
| Glu Thr Gly Gly Ser Phe Leu Ala Gly Ser Val Leu Ala Gly Trp Asp |      |
| 210 215 220   |      |
| ggc tac aac atc acg tcg gac ccg aat gcg ggg atc ggc agc tgg acg | 840  |
| Gly Tyr Asn Ile Thr Ser Asp Pro Asn Ala Gly Ile Gly Ser Trp Thr |      |
| 225 230 235 240   |      |
| cag cag cag ctc gtg cag tat ttg cgc acc ggc agc gtg ccg ggc gtc | 888  |
| Gln Gln Gln Leu Val Gln Tyr Leu Arg Thr Gly Ser Val Pro Gly Val |      |
| 245 250 255   |      |
| gcg cag gcg gcc ggg ccg atg gcc gag gcg gtc gag cac agc ttc tcg | 936  |
| Ala Gln Ala Ala Gly Pro Met Ala Glu Ala Val Glu His Ser Phe Ser |      |
| 260 265 270   |      |
| aag atg acc gaa gcg gac atc ggt gcg atc gcc acg tac gtc cgc acg | 984  |
| Lys Met Thr Glu Ala Asp Ile Gly Ala Ile Ala Thr Tyr Val Arg Thr |      |
| 275 280 285   |      |
| gtg ccg gcc gtt gcc gac agc aac gcg aag cag ccg cgg tcg tcg tgg | 1032 |
| Val Pro Ala Val Ala Asp Ser Asn Ala Lys Gln Pro Arg Ser Ser Trp |      |
| 290 295 300   |      |
| ggc aag ccg gcc gag gac ggg ctg aag ctg cgc ggt gtc gcg ctc gcg | 1080 |
| Gly Lys Pro Ala Glu Asp Gly Leu Lys Leu Arg Gly Val Ala Leu Ala |      |
| 305 310 315 320   |      |
| tcg tcg ggc atc gat ccg gcg cgg ctg tat ctc ggc aac tgc gcg acg | 1128 |
| Ser Ser Gly Ile Asp Pro Ala Arg Leu Tyr Leu Gly Asn Cys Ala Thr |      |
| 325 330 335   |      |
| tgc cac cag atg cag ggc aag ggc acg ccg gac ggc tat tac ccg tcg | 1176 |
| Cys His Gln Met Gln Gly Lys Gly Thr Pro Asp Gly Tyr Tyr Pro Ser |      |
| 340 345 350   |      |
| ctg ttc cac aac tcc acc gtc ggc gcg tcg aat ccg tcg aac ctc gtg | 1224 |
| Leu Phe His Asn Ser Thr Val Gly Ala Ser Asn Pro Ser Asn Leu Val |      |
| 355 360 365   |      |
| cag gtg atc ctg aac ggc gtg cag cgc aag atc ggc agc gag gat atc | 1272 |

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Gln Val Ile Leu Asn Gly Val Gln Arg Lys Ile Gly Ser Glu Asp Ile  
                  370                 375                 380  
 ggg atg ccc gct ttc cgc tac gat ctg aac gac gcg cag atc gcc gcg   1320  
 Gly Met Pro Ala Phe Arg Tyr Asp Leu Asn Asp Ala Gln Ile Ala Ala  
                  385                 390                 395                 400  
 ctg acg aac tac gtg acc gcg cag ttc ggc aat ccg gcg gcg aag gtg   1368  
 Leu Thr Asn Tyr Val Thr Ala Gln Phe Gly Asn Pro Ala Ala Lys Val  
                  405                 410                 415  
 acg gag cag gac gtc gcg aag ctg cgc tga catagtcggg cgccgcgaca   1418  
 Thr Glu Gln Asp Val Ala Lys Leu Arg  
                  420                 425  
 cggcgcaacc gataggacag gag                           1441

&lt;210&gt; 16

&lt;211&gt; 425

&lt;212&gt; PRT

&lt;213&gt; Burkholderia cepacia

&lt;400&gt; 16

Val Arg Lys Ser Thr Leu Thr Phe Leu Ile Ala Gly Cys Leu Ala Leu  
          1                 5                 10                 15  
 Pro Gly Phe Ala Arg Ala Ala Asp Ala Ala Asp Pro Ala Leu Val Lys  
          20                 25                 30  
 Arg Gly Glu Tyr Leu Ala Thr Ala Met Pro Val Pro Met Leu Gly Lys  
          35                 40                 45  
 Ile Tyr Thr Ser Asn Ile Thr Pro Asp Pro Asp Thr Gly Asp Cys Met  
          50                 55                 60  
 Ala Cys His Thr Val Lys Gly Gly Lys Pro Tyr Ala Gly Gly Leu Gly  
          65                 70                 75                 80  
 Gly Ile Gly Lys Trp Thr Phe Glu Asp Phe Glu Arg Ala Val Arg His  
          85                 90                 95  
 Gly Val Ser Lys Asn Gly Asp Asn Leu Tyr Pro Ala Met Pro Tyr Val  
          100                105                110  
 Ser Tyr Ala Lys Ile Lys Asp Asp Asp Val Arg Ala Leu Tyr Ala Tyr  
          115                120                125  
 Phe Met His Gly Val Glu Pro Val Lys Gln Ala Pro Pro Lys Asn Glu  
          130                135                140  
 Ile Pro Ala Leu Leu Ser Met Arg Trp Pro Leu Lys Ile Trp Asn Trp  
          145                150                155                160  
 Leu Phe Leu Lys Asp Gly Pro Tyr Gln Pro Lys Pro Ser Gln Ser Ala  
          165                170                175  
 Glu Trp Asn Arg Gly Ala Tyr Leu Val Gln Gly Leu Ala His Cys Ser  
          180                185                190

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Cys | His | Thr | Pro | Arg | Gly | Ile | Ala | Met | Gln | Glu | Lys | Ser | Leu | Asp |
|     |     |     |     |     |     |     | 195 |     | 200 |     |     | 205 |     |     |     |
| Glu | Thr | Gly | Gly | Ser | Phe | Leu | Ala | Gly | Ser | Val | Leu | Ala | Gly | Trp | Asp |
|     |     |     |     |     |     |     | 210 |     | 215 |     |     | 220 |     |     |     |
| Gly | Tyr | Asn | Ile | Thr | Ser | Asp | Pro | Asn | Ala | Gly | Ile | Gly | Ser | Trp | Thr |
|     |     |     |     |     |     |     | 225 |     | 230 |     |     | 235 |     |     | 240 |
| Gln | Gln | Gln | Leu | Val | Gln | Tyr | Leu | Arg | Thr | Gly | Ser | Val | Pro | Gly | Val |
|     |     |     |     |     |     |     | 245 |     | 250 |     |     | 255 |     |     |     |
| Ala | Gln | Ala | Ala | Gly | Pro | Met | Ala | Glu | Ala | Val | Glu | His | Ser | Phe | Ser |
|     |     |     |     |     |     |     | 260 |     | 265 |     |     | 270 |     |     |     |
| Lys | Met | Thr | Glu | Ala | Asp | Ile | Gly | Ala | Ile | Ala | Thr | Tyr | Val | Arg | Thr |
|     |     |     |     |     |     |     | 275 |     | 280 |     |     | 285 |     |     |     |
| Val | Pro | Ala | Val | Ala | Asp | Ser | Asn | Ala | Lys | Gln | Pro | Arg | Ser | Ser | Trp |
|     |     |     |     |     |     |     | 290 |     | 295 |     |     | 300 |     |     |     |
| Gly | Lys | Pro | Ala | Glu | Asp | Gly | Leu | Lys | Leu | Arg | Gly | Val | Ala | Leu | Ala |
|     |     |     |     |     |     |     | 305 |     | 310 |     |     | 315 |     |     | 320 |
| Ser | Ser | Gly | Ile | Asp | Pro | Ala | Arg | Leu | Tyr | Leu | Gly | Asn | Cys | Ala | Thr |
|     |     |     |     |     |     |     | 325 |     | 330 |     |     | 335 |     |     |     |
| Cys | His | Gln | Met | Gln | Gly | Lys | Gly | Thr | Pro | Asp | Gly | Tyr | Tyr | Pro | Ser |
|     |     |     |     |     |     |     | 340 |     | 345 |     |     | 350 |     |     |     |
| Leu | Phe | His | Asn | Ser | Thr | Val | Gly | Ala | Ser | Asn | Pro | Ser | Asn | Leu | Val |
|     |     |     |     |     |     |     | 355 |     | 360 |     |     | 365 |     |     |     |
| Gln | Val | Ile | Leu | Asn | Gly | Val | Gln | Arg | Lys | Ile | Gly | Ser | Glu | Asp | Ile |
|     |     |     |     |     |     |     | 370 |     | 375 |     |     | 380 |     |     |     |
| Gly | Met | Pro | Ala | Phe | Arg | Tyr | Asp | Leu | Asn | Asp | Ala | Gln | Ile | Ala | Ala |
|     |     |     |     |     |     |     | 385 |     | 390 |     |     | 395 |     |     | 400 |
| Leu | Thr | Asn | Tyr | Val | Thr | Ala | Gln | Phe | Gly | Asn | Pro | Ala | Ala | Lys | Val |
|     |     |     |     |     |     |     | 405 |     | 410 |     |     | 415 |     |     |     |
| Thr | Glu | Gln | Asp | Val | Ala | Lys | Leu | Arg |     |     |     |     |     |     |     |
|     |     |     |     |     |     |     | 420 |     | 425 |     |     |     |     |     |     |

&lt;210&gt; 17

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: heme binding motif

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (2, 3)

&lt;223&gt; Xaa=unknown

18/18

<400> 17  
Cys Xaa Xaa Cys His  
1 5

<210> 18  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer

<400> 18 27  
catgccatgg cacacaacga caacact

<210> 19  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer

<400> 19 31  
cccaagcttg ggtcagactt ctttcagg c